

REMARKS

This application has been amended in a manner that is believed to place the application in condition for allowance at the time of the next Official Action.

Claims 34-35, 38-44 and 46 are pending in the present application. Independent claims 43, 44 and 46 were free of prior art in the outstanding Official Action. Dependent claims 34-35 and 38-42 have been amended so that they are now dependent on claim 43. Independent claims 43, 44 and 46 have been amended to address the formal matters raised in the outstanding Official Action. In addition, claims 43, 44 and 46 have been amended so that the references to the "cleavable" embodiments have been removed for the sake of clarity. Independent claims 43, 44 and 46 actually characterize the "two padlock probe" embodiment. Thus, the unneeded recitations directed to the "cleavable" embodiments have been removed to prevent any confusion. Thus, while independent claims 43, 44 and 46 have been amended, applicant respectfully requests that the amendment be entered and that the changes to the claims are only of a formal nature.

Claims 43-46 were rejected under 35 USC 112, second paragraph, for allegedly being indefinite. The Official Action objected to the terms "(padlock)" and "(or de-connected)". This information was presented in this format to help the understanding of the reader. However, the claims have been

amended so that this information is no longer provided in the parentheses.

Claims 33 and 38-42 were rejected under 35 USC 102(b) as allegedly being anticipated by KWIATKOWSKI. Claims 34-35 and 42 were rejected under 35 USC 103(a) as allegedly being unpatentable over KWIATKOWSKI in view of URDEA et al. Applicant believes the present amendment overcomes this rejection.

As noted above, independent claims 43, 44 and 46 remain in the application. Independent claims 43, 44 and 46 were found to be free of prior art. Claims 34-35 and 38-42 have been amended so that they are dependent on claim 43. Accordingly, applicant believes the present amendment obviates this rejection.

Claims 34-35 and 38-46 were rejected on the grounds of non-statutory obviousness-type double patenting as allegedly being unpatentable over claims 1-16 and 20 of U.S. Patent No. 6,558,928 in view of URDEA et al. Applicant believes that the present amendment overcomes this rejection.

In imposing the rejection, the Official Action alleges that the claims of U.S. Patent No. 6,558,928 ("the 928 patent") merely differ in that the present claims "define the probes as having an anchor for immobilization of the probe and claims 34-35 further define the probes as having branches".

However, the claimed invention is concerned with an improved method of detecting specific nucleic acid sequences. The use of a circularized detectable probe allows the use of a

solid phase assay where immobilized probes are only detectable if they become circularized as a result of target-specific binding. The '928 patent is directed to rolling circle replication of probes. Rolling circle replication of a padlock primer is often inhibited when it is hybridized to a target nucleic acid that is long or circular. The '928 patent is concerned with detecting variations in nucleic acid sequences involving selective amplification by rolling circle amplification of padlock probes corresponding to the presence of a specific target sequence, which causes circularization. The concept is that the target sequence is cut before, during or after target recognition and probe circularization to aid in rolling circle replication.

Claim 20 of the '928 patent is directed to a method of proximity probing using a padlock probe. Thus, the '928 patent does disclose embodiments with two padlock probes, but there the similarity ends; there is no disclosure in '928 which suggests a probe which has a detectable function which is separable from the part of the probe which is immobilized (e.g. a second probe with a detectable function).

In effort to remedy the deficiencies of LANDEGREN for reference purposes, the Official Action cites to URDEA et al. However, URDEA et al. is concerned with nucleic acid multimers and amplified nucleic acid hybridization assays. URDEA et al. teach that linear or branched oligonucleotide multimers can be used as amplifiers in biochemical assays. However, there is no

recognition of a probe which has a detectable function which is separate from the part of the probe which is immobilized as set forth in the claimed invention. In this respect, URDEA et al. fail to remedy the deficiencies of the '928 patent for reference purposes.

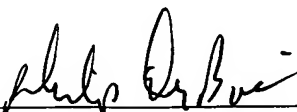
Thus, in view of the above, applicant respectfully requests that the double patenting rejection be withdrawn.

In view of the present amendment and the foregoing remarks, therefore, applicant believes that the present application is in condition for allowance at the time of the next Official action. Allowance and passage to issue on that basis is respectfully requested.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

YOUNG & THOMPSON

  
Philip Dubois, Reg. No. 50,696  
745 South 23<sup>rd</sup> Street  
Arlington, VA 22202  
Telephone (703) 521-2297  
Telefax (703) 685-0573  
(703) 979-4709

PD/lrs